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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,465	11/21/2003	Alexandre Corjon	245498US41XDIV	8127
22850	7590	09/06/2005		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER HOLZEN, STEPHEN A	
			ART UNIT	PAPER NUMBER
			3644	
DATE MAILED: 09/06/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/717,465

Applicant(s)

CORJON ET AL.

Examiner

Stephen A. Holzen

Art Unit

3644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 3-5, 14-16, 20-22 and 29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2, 6-13, 17-19, 23-28, 30-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's arguments filed 6/7/2005 have been fully considered but they are not persuasive. The applicant has argued that the examiner will not be seriously burdened by searching the various claimed and disclosed embodiments in the application. The applicant argues that the examiner can theoretically search all subclasses. The applicant is clearly not aware of the number of references in the subclasses. A search of every subclass is time prohibitive.

The applicant has not touched on the merits of the election requirement. Since the examiner has only done an election species, he need not provide justification for placing the species in separate subclasses. Therefor the applicant's arguments in this respect are moot. Applicant's arguments with respect to the electronic searching of application are off point, not touching on the merits of the election requirement and are therefor moot. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The examiner believes that claim 21 should have been withdrawn although the applicant did not specially state. Claim 21 is drawn to the extension element and not the jet fluid element. This claim has been withdrawn with the rest of the withdrawn claims.

Claims 1-31 are pending

Claims 3-5, 14-16, 20-22, and 29 are withdrawn.

Claims 1-2, 6-13, 17-19, 23-28, 30-31 have been examined.

***Response to Arguments***

2. Applicant's arguments filed 3/7/2005 have been fully considered but they are not persuasive.

3. Applicant's arguments with respect to Crouch have been considered but are moot in view of the new ground(s) of rejection. The examiner has withdrawn this rejection however does not concede that the applicant's claims overcome the teachings of Crouch.

4. The applicant has argued that Lessen does not teach a "periodic perturbation" and instead teaches a "prescribed flow rate". The examiner would agree that Lessen does teach continuously providing a flow of fluid from the supply to the nozzle however also asserts that Lessen also teaches a periodic perturbation. Lessen states that the momentum flux may be increased or decreased based on variable conditions, and that variable flow rates are required to accommodate the variable condition, and further that the means for supplying the injected fluid at a flow rate which is adjusted for the range of operating conditions (see Col. 4, lines 21-34). The examiner asserts that these changing operating conditions are periodic in the sense that they are recurring or reappearing intermittently and therefor the flow rates must be adjusted as such.

5. The statements of intended use provides language that suggests or makes optional but does not require steps to be performed or does not limit the scope of a claim or claim limitation (MPEP § 2106(II,C)). Accordingly, one having ordinary skill in the art cannot ascertain the metes and bound of the claim. The examiner cannot determine if the wavelength and instability modes of the core of the first eddy are within the scope of the claim.

6. Applicant has argued that Lesson does not teach "emitting a jet of fluid transverse to the direction of travel of aircraft". Applicant's claims only require this capability. Lesson is capable of injecting a fluid transverse to the direction of airflow when the aircraft experiences adverse weather conditions or turbulence (the direction of airflow is altered by wind gusts and pressure changes), or flies through an air pocket. The examiner asserts that the direction of travel is always only longitudinal. Further it should be appreciated that Lesson teaches a swirl generator (#28), which comprises a plurality of curved vanes mounted fixedly about the periphery of the conduit in which they are contained and curved in a clockwise or counter clockwise direction to impart a rotational component to the movement of the air. The swirl generator will emit fluid in a plurality of directions one of which will be transverse to the direction of travel.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-2, 6-13, 17-19, 23-28, 30-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Lessen (3,881,669). Lessen discloses a method comprising

Re – Claim 1: generating a periodic perturbation adjacent an area of creation of the first eddy, the perturbation has a wavelength and is capable of exciting at least one internal instability mod of a core of the first eddy. (Creating a disturbance and instability in the flow that grows with respect to time and space Col. 1, lines 27-28 & 33-35). It should be appreciated that this flow is actually periodic in that the momentum flux may be increased or decreased in the practice of the invention based on free airspeed, induced drag, and distance of vortex attenuation.

Re – Claims 2 and 6: wherein the periodic perturbation is generated in an area adjacent a flap of the wing (#14 = Flap, #30 = generation of periodic perturbation, see Figures 1 and 2)

Re – Claims 7 and 24: emitting a jet of fluid (#30 and #26) transverse to a direction of travel (see paragraph #5 of this detail action). The jet of fluid is emitted periodically from a flap of the aircraft in as much as the momentum flux may be increased or decreased in the practice of the invention based on free airspeed, induced drag, and distance of vortex attenuation. The emitted fluid having a wavelength. This emission is capable of exciting at least one instability mode. (see Col. 1, lines 33-35).

Re – Claim 8, 9, 13, 26: The speed with which the air is emitted will have a velocity that is at least equal to the aircraft relative to the air flowing around the wing.

Re – Claim 10: Lesson teaches generating a second period perturbation adjacent an area of creation of the third eddy wherein the second perturbation has a second wavelength (see Figure 1, #50, #60, #40)

Re – Claims 11, 12: This claim does not serve to further limitation the method. The claims are only functional in nature and Lessen is capable of matching these functional characteristics.

Re – Claim 17: wherein the first and second jet are emitted from areas adjacent the first and second flaps of the first and second wings.

Re – claim 18, 19, 23, 25, 27, 28, 30 and 31: These claims are not drawn to the method, and do not positively recite any positive steps taken, and are only drawn to the results of method. It should be appreciated that Lessen is capable of generating the exact same airflow characteristics.

### ***Claim Rejections - 35 USC § 112***

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

11. Claims 1-2, 6-13, 17-19, 23-28, 30-31 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for generating a period

perturbation during landing and take off operations, does not reasonably provide enablement for generating a periodic perturbation every single time a vortex exists behind the aircraft (such as during cruising flight, see Page 1, line 28 – Page 2, line 2). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims since the claimed scope includes cruising flight. Applicant has admitted that the vortex destruction is only to occur during take off and landing, yet the claims are drawn to exciting the internal instability mode whenever an eddy phenomenon exists.

12. Claims 1-2, 6-13, 17-19, 23-28, 30-31 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: The applicant has not enabled one of ordinary skill in the art to use the invention as claimed, since the applicant's method would not work during cruising operations. Therefore the necessary method limitations of "during landing or take off" are not present.

13. Claims 1-2, 6-13, 17-19, 23-28, 30-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The statements of intended use ("capable" and "such that") provides language that suggests or makes optional but does not require steps to be performed or does not limit the scope of a claim or claim limitation (MPEP § 2106(II, C)). Accordingly, the metes and bounds of the claims



Art Unit: 3644

cannot be ascertained by one having ordinary skill in the art. The examiner cannot determine if the wavelength and instability modes of the core of the first eddy are within the scope of the claim or if that the applicant intends these to be limitations at all.

14. Claims 1-2, 6-13, 17-19, 23-28, 30-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The applicant has enabled an aircraft having two wings, and two eddies, and these eddies will merge. The applicant has further enabled generating at least two perturbations adjacent an area of the creation of each eddy. The claims however are only drawn to one eddy and one perturbation device. One of ordinary skill in the art would understand then how to make and use a single perturbation device, where the applicant has only enabled the coupling of pairs of eddies through the use of pairs of perturbation devices. Accordingly, the metes and bound of the claims can not be ascertained by one having ordinary skill in the art.

15. Claims 1-2, 6-13, 17-19, 23-28, 30-31 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a pair of perturbation devices, does not reasonably provide enablement for a single perturbation device as claimed. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims without undue experimentation.

16. The term "area(s)" in claims 2, 6, 13, and 17 is a relative term, which renders the claim indefinite. The term "in an area" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. How big is the area? How much volume does an area cover? One of ordinary skill in the art would understand what "in an area" means. Accordingly, the metes and bound of the claim cannot be ascertained by one having ordinary skill in the art.

17. Claims 1-2, 6-13, 17-19, 23-28, 30-31 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while teaching that instabilities modes can be determined, does not reasonably provide enablement for determining them. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use or make the invention commensurate in scope with these claims. See page 3, line 20: applicant has stated in the specification that the instability mode is "determined" from the size of the cores of the eddies, and the ratios between the sizes of the cores, and the distance between the eddies. However the applicant has not stated that these variables are the same for every aircraft. Nor has the applicant provided equations that would allow one of ordinary skill in the art to understand how to determine the size of the cores. Furthermore the core size seems to be a variable that is dependant on a plurality of dependant variables. How does one find the ratio of the sizes of the cores and the distance between the eddies? These

Art Unit: 3644

appear to be variables themselves and the applicant has not disclosed the manner in which these variables can be determined.

18. Claims 1-2, 6-13, 17-19, 23-28, 30-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention without undue experimentation. The applicant has not enabled one to determine the sizes or modes of the eddies, and these sizes and modes cannot be determine without undue experimentation.

19. Claims 1-2, 6-13, 17-19, 23-28, 30-31 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: determining the modes of a core of the eddies. Without determining the mode of the core, one would not be able to generate a periodic perturbation that is capable of exciting an internal instability mode.

20. Claims 1-2, 6-13, 17-19, 23-28, 30-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to

make and/or use the invention. The applicant has not specifically defined how to determine the required wavelength that would be capable of exciting the internal instability mode of the core of the first eddy. On page 5, lines 20-25: applicant states, "Generally the wavelength is essentially equal to the mean diameter of the corresponding eddy core." What does the word "generally" mean? Does this mean most of the time, all of the time, or only sometimes? Is the mean diameter of the eddy core always the same value or does it change with the size and speed of the aircraft? What does the phrase "essentially equal" mean? Does that mean, "sometimes equal", "equal", "almost never equal, but close thereto"? As discussed above in paragraphs 17-19 (of this office action) the applicant has not specified the mean diameter of the eddy core, and therefore the wavelength is itself a dependent variable. The examiner asserts that the applicant has not enabled one of ordinary skill in the art to make and use a perturbation device to create a perturbation wavelength that would be capable of exciting the internal instability modes without undue experimentation.

21. Claims 1-2, 6-13, 17-19, 23-28, 30-31 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for generating a periodic perturbation, does not reasonably provide enablement for generating a periodic perturbation that is capable of exciting the internal instability mode of an eddy core. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. The perturbation wavelength is a dependant variable that changes with

the mode and size of the eddy cores. The mean diameter of the eddy core is itself a dependant variable that is determined based on the flight conditions and the stage of aircraft flight (take off vs. landing). The examiner asserts that the applicant has not enabled one of ordinary skill in the art to make and use a perturbation device to create a perturbation wavelength that is capable of exciting the internal instability mode of an eddy core of exciting the internal instability modes without undue experimentation.

22. Claims 1-2, 6-13, 17-19, 23-28, 30-31 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: determining the mean diameter of the eddy core, determining the instability modes and determining the amplitude and frequency of the perturbation wavelength. Without these steps the method as claimed would not be capable of exciting the internal instability mode of the core of the first eddy.

### ***Conclusion***

23. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

Art Unit: 3644

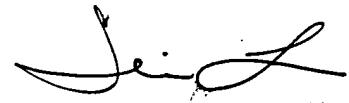
shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen A. Holzen whose telephone number is 571-272-6903. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu can be reached on 571-272-7045. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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